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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/608,016

06/30/2003

Kazutaka Shibata

AI 288

1927

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07/25/2007

EXAMINER

IM, JUNGHWA M

ART UNIT

PAPER NUMBER

2811

MAIL DATE

DELIVERY MODE

07/25/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/608,016

Applicant(s)

SHIBATA, KAZUTAKA

Examiner

Junghwa M. Im

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3,4,6,8,10-12 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,4,6,14,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 8,10-12 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 17 recite the limitation that the semiconductor substrate is divided from the wafer, therefore, implying that the semiconductor substrate is a semiconductor chip. With this understanding, a second resin film having one of higher and higher strength than the first resin film cannot be formed on the other surface of the semiconductor chip. Fig. 4 of the instant invention substantiates this aspect. That is, Fig. 4 of the instant invention does not show a second resin film on the other surface of the semiconductor chip.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 3-4, 6, 14, 16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Saimoto et al. (US Pat. 6,730,595), hereinafter Saimoto.

Regarding claims 3, 16 and 17, insofar as understood, Saimoto discloses in col. 5, line 51-col. 6, line 39,

a semiconductor device/semiconductor wafer, comprising:

a semiconductor substrate divided from the wafer;

at least one of a protruding electrode (col. 4, lines 43-48 and col. 6, lines 11-15) and wiring (col. 6, lines 11-15) formed on one surface of the semiconductor substrate; and

a first resin film (resin having a low elastic modulus; col. 5, lines 51-61) formed on the one surface of the semiconductor substrate, and

wherein the first resin film has elasticity lower enough to reduce stress induced by a difference in thermal expansion coefficient between the semiconductor substrate and the first resin film (col. 6, lines 11-15), and

wherein a second resin film having one of higher and higher strength than the first resin film is formed on the other surface of the semiconductor device (col. 6, lines 22-27).

Regarding claim 4, Saimoto discloses that an elastic modulus of the second resin film is 1 GPa to 100 GPa that is in the recited range of 15 GPa or higher (col. 6, lines 22-27).

Regarding claim 6, Saimoto discloses that the semiconductor substrate has a thickness of 50-350  $\mu\text{m}$  that is in the recited range of 200  $\mu\text{m}$  or less (co. 6, lines 5-6). And it is inherent that the Saimoto's semiconductor substrate is placed at a center of the semiconductor device in a thickness direction of a cross section thereof since the resin film is formed on the front and the back surfaces of the substrate, that is, the substrate is sandwiched between the resin films.

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Regarding claim 14, Saimoto discloses that the semiconductor substrate has a thickness of 50-350  $\mu\text{m}$  that is in the recited range of 550  $\mu\text{m}$  or less (co. 6, lines 5-6).

### ***Allowable Subject Matter***

Claims 8, 10, 11 and 15 are allowed.

### ***Response to Arguments***

Applicant's arguments filed March 28, 2007 have been fully considered but they are not persuasive. The rejection on claim 3 stands, modified only to accommodate the amendments made to the claims by Applicant. New rejections are made in response to Applicant amended claims. In addition, the examiner presents the remarks below in response to Applicant's arguments.

Applicant argues that "According to the Examiner, Saimoto et al. disclosed a first resin film at col. 6, lines 11-15. However, the resin film disclosed by Saimoto et al. is merely a surface protecting adhesive film that is adhered to the surface of a semiconductor wafer to prevent breakage of the wafer during the various steps of its production, and is peeled off from the wafer Surface after completion of the wafer production steps. In this regard, the Examiner is referred to column 4, lines 6-7 of Saimoto et al. On the other hand, the first resin film of the present invention is a layer that is retained on the semiconductor substrate of the semiconductor device of the invention. To make this clearer, claim 3 has been amended to specify that the semiconductor substrate is not the wafer of Saimoto et al., but rather is a substrate that is divided from a semiconductor wafer." Note that Fig. 4 of the instant invention does not show the second

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resin on the back of the semiconductor chip in the final product, implying that the second resin on the back of the wafer is also removed in the final product.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

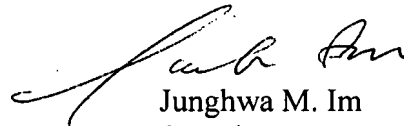
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junghwa M. Im whose telephone number is (571) 272-1655. The examiner can normally be reached on MON.-FRI. 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne A. Gurley can be reached on (571) 272-1670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Junghwa M. Im  
Examiner  
Art Unit 2811

jmi